



CHEMICAL EMERGENCY PREVENTION & PLANNING

Newsletter


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US EPA Region 10

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EPA Penalizes Four Northwest Facilities for Risk Management Violations

(Pacific Northwest, WA, ID). The U.S. Environmental Protection Agency (EPA) recently issued three penalties to four facilities in Washington and Idaho for federal Clean Air Act Risk Management Program violations. The penalties, ranging from \$800 and \$7,275, were levied against facilities that handle toxic and flammable chemicals.

The penalties were assessed under Section 112(r) of the federal Clean Air Act. This section requires the development of Risk Management Plans (RMPs) for all public and private facilities that manufacture, process, use, store or otherwise handle flammable gases and toxic chemicals such as chlorine, propane, sulfur dioxide and formaldehyde. Facility's RMPs are used by local emergency planners and responders to protect the public from accidental releases of flammable gases and/or toxic chemicals.

"RMPs are required to be fully updated and resubmitted a minimum of every five years," said Kelly Huynh, EPA's RMP Coordinator Region 10 in Seattle. "The Plans are essentially checklists indicating that a program has been developed. The quality of the program is compared against the program regulations during an inspection."

The Risk Management Program requires an emergency response strategy, evaluation of a worst case and probable case chemical release, and a prevention program that includes operator training, a review of the hazards associated with using toxic or flammable substances, operating procedures and equipment maintenance.

The following facilities entered into settlement agreements with EPA between February and April of 2006, and have corrected their violations:

- The City of Spokane Advanced Wastewater Treatment Plant, \$7,275 penalty for an inadequate Risk Management Program, located in Spokane, WA
- Soda Springs Elevator Inc. for their Government Dam and Hopper Avenue facilities, \$800 penalty for refiling their Risk Management Plans late, located in Soda Springs, ID
- BHS Marketing, \$1,200 penalty for refiling their Risk Management Plan late, located in Nampa, ID

All of these penalties were conducted under EPA's Expedited Settlement Agreement process. The EPA has the option to use the Expedited Settlement Agreement process for easily correctable violations.

Clean Air Act 112(r) Newsletter

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EPCRA News

TRI Program Adopts Reporting by NAICS Codes Beginning 2007

(EPA) Owners and operators of facilities subject to Toxics Release Inventory (TRI) reporting must identify their principal business activities using North American Industry Classification System (NAICS) codes beginning with reports due July 1, 2007, for releases and other waste management activities for the 2006 calendar year. In the past, principal business activities were reported using Standard Industrial Classification (SIC) codes, so identifying industrial codes is not a new requirement. EPA is not adding or deleting industry groups subject to reporting requirements, but rather is simply identifying the NAICS codes that are subject to TRI. The EPA Office of Management and Budget plans to update the NAICS system every five years. The next update is scheduled for 2007. TRI-covered NAICS codes, if affected by these updates, will be revised accordingly.

Additional information to help facilities convert from SIC to NAICS are available at: <http://www.epa.gov/tri/tridata/naics/>.

Featured Agency Profile

Emergency Planning And Community Right-To-Know Act (EPCRA)

The **Emergency Planning & Community Right-To-Know Act (EPCRA)** was passed by Congress after the 1984 disaster at a Union Carbide facility at Bhopal, India. That disaster involved a release of a large amount of methyl isocyanate, which quickly killed over a thousand people and permanently sickened thousands more. This was followed shortly by a release of the same chemical at a Union Carbide facility located at Institute, West Virginia. Congress responded by passing the Emergency Planning & Community Right-To-Know Act as part of the Superfund Amendments Re-Authorization Act (SARA Title III) in 1986. The idea was to prevent similar accidents from taking place.

Why Comply with EPCRA?

Compliance with EPCRA is important for many different reasons, but most importantly, for emergency responders to be able to plan, prepare, and mitigate a chemical release or a fire involving hazardous chemicals at a facility. Compliance is in the best interests of everyone. When emergency responders know what chemicals are present at a facility, and the locations and amounts of these hazardous chemicals, they will be able to deal with the chemical emergency in a more efficient and effective manner. This saves time, money, and lives.

Emergencies don't always occur during business hours. At 3:00 am, emergency responders have to know what they are dealing with in order to protect themselves, property, and lives. They will be legitimately concerned about entering a building with an unknown kind or quantity of chemicals resulting in a slower and more cautious response to prevent injury or loss of life. They may also take precautionary measures such as evacuation or shelter-in-place when these measures may not be necessary. Alternatively, it is also in a facility's best interest to limit its liability due to potential public and employee exposure to hazardous chemicals released during a chemical spill or fire, so the data about the hazardous chemical inventory and appropriate facility emergency plan should be in place so that responders will know when to initiate shelter-in-place and/or evacuation measures.



This facility has several tanks of asphalt and asphalt emulsions, which are heated and can certainly burn. Would you want to be an emergency responder trying to respond to an incident here without chemical hazard information? What chemical or mixture is in each of these tanks? Which ones are heated?

How to Comply with EPCRA & Who Must Report ?

EPCRA requires certain information to be reported by facility owners and operators. There are certain due dates for the reports. A facility operator who has not complied with EPCRA may not be compliant with other environmental requirements. In fact, the EPA EPCRA penalty policy, used for determining and assessing penalties to facilities out of compliance with EPCRA, requires an examination of the overall environmental compliance of a facility when assessing the EPCRA penalty. EPCRA compliance helps assure preparation to prevent and mitigate chemical spills that can cause liability problems. A contaminated site is a financial liability that could have severe financial consequences for a facility owner.

Does Your Company Have Reporting Obligations Under EPCRA?

Many companies are not aware that they may have reporting obligations under EPCRA, and some of the reporting thresholds are surprisingly low. EPCRA regulations (40 CFR Parts 350-372) established reporting obligations for facilities which store or manage specified chemicals. A brief overview of the five different EPCRA reporting provisions will help companies determine whether their operations and activities may trigger one or more of these requirements.



1) Emergency Release Planning Notification

Section 302 provisions require that any facility with "extremely hazardous substances (EHS)" in amounts at or above its threshold planning quantity must notify the State Emergency Response Commission (SERC) and the Local Emergency Planning Committee (LEPC) **within 60 days** after they first receive a shipment or produce the substance on site. The facility also must notify the LEPC of a facility representative who will participate in the emergency planning process. EHSs are available at EPA **List-of-Lists** at weblink: [http://yosemite.epa.gov/oswer/ceppoweb.nsf/vwResourcesByFilename/title3.pdf/\\$file/title3.pdf?OpenElement](http://yosemite.epa.gov/oswer/ceppoweb.nsf/vwResourcesByFilename/title3.pdf/$file/title3.pdf?OpenElement).

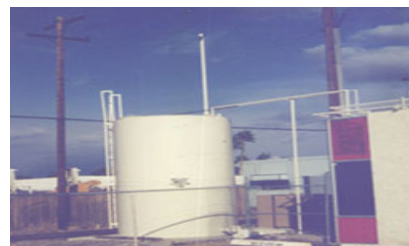


2) Emergency Release Reporting

EPCRA Section 304(a) and CERCLA Section 103 requires the facility to immediately notify the SERC and the LEPC in the event of a release of a hazardous substance that is equal to or more than the designated reportable quantity of:



The orange cloud in this scene is a release of Nitric Acid in progress. It came from tanks at an "agricultural" operation that did not understand it had to report the Nitric Acid under EPCRA Section 302, and the "release" under EPCRA Section 304 and CERCLA Section 103. The firefighters did not know what this colored plume was. FORTUNATELY, the cloud was visible. Not all spills are colored or occur during daylight hours. The neighbors called the fire department, not the facility. Other hazardous chemicals were stored at this facility, and the Nitric Acid ate into the other tanks. This was something the facility owner/operator never considered. Over 200 people reported adverse health effects from exposure to the Nitric Acid fumes in a follow-up health survey.



This tank is part of an Anhydrous Ammonia refrigeration system. Until citizens brought suit to make the facility file Tier Two Reports, it had not complied with EPCRA. The plastic tank was behind the building and next to railroad tracks. The Anhydrous Ammonia refrigeration system held over 5,000 pounds of Anhydrous Ammonia, enough to affect people on the nearby and busy Interstate highway if the system failed and winds were available. What would emergency responders have done if this happened? They would not have known the source of the Ammonia.

- EPCRA "extremely hazardous substance (EHS)" or
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) "hazardous substance".

Both the EHSs and the CERCLA hazardous substances including reportable quantities are found in EPA **List-of-Lists**. EPA has construed the immediacy component very strictly, taking the position that a delay of as little as 15 minutes is a reporting violation.



This complex site has a number of different industrial gases. With the Tier II information, firefighters still had a difficult time dealing with explosions and fires that occurred two years after this photo was taken. The explosions sent debris flying into the air damaging neighboring businesses. The heat of the fire destroyed many automobiles parked nearby. These enormous tanks and smaller ones were not reported until citizens brought suit to make the facility file Tier II Reports. The facility had actually sent in a letter stating that it did not have enough on-site to require reporting! Fortunately, alert citizens brought EPCRA citizen suit BEFORE the disaster occurred, and made emergency and disaster training for the site's employees part of the settlement.



3) Material Safety Data Sheets Submission

EPCRA Section 311 requires a facility at which a "hazardous chemical", as defined by Occupational Safety and Health Act (OSHA) [29 CFR part 1910, subpart Z](http://www.osha-slc.gov/SLTC/hazardcommunications/index.html) as having a material safety data sheet (MSDS), is present on-site in an amount exceeding a specified threshold to submit MSDS or lists of MSDS to the SERC, LEPC, and local fire department. The MSDS notification must be submitted **within three months** after the substance first come to be located on-site.

Approximately 500,000 products have MSDSs. These are available in: <http://www.osha-slc.gov/SLTC/hazardcommunications/index.html>



4) Emergency And Hazardous Chemical Reporting (or Tier I/ Tier II Inventory)

Section 312 of the EPCRA stipulates that the owner or operator of a facility that is required to prepare or have available an MSDS for a hazardous chemical shall submit to the SERC, LEPC and local fire department a completed emergency and hazardous chemical inventory form (or Tier Form) on **annual basis**.

The threshold levels for reporting are:

- for extremely hazardous substances (EHSs), 500 pounds at any one time or the chemical threshold planning quantity (TPQ) designated by EPA at 40 C.F.R. part 355 Appendices A and B, whichever is less;
- for hazardous substances, 10,000 pounds at any one time; and
- compressed gases equal to or more than 1,000 cubic feet at standard temperature and pressure.

The Tier II Report must be filed by a facility by **March 1st** of the following calendar year for the inventory of reportable chemicals on-site (e.g.

whatever chemicals a facility has on-site during the year must be reported by March 1st of the following calendar year). The facility does not have to file a Tier II Report if there were never enough hazardous chemicals on-site to trigger the reporting requirement. The current Tier II reporting procedures in EPA Region 10 are available in the following web sites:

- (Alaska) <http://www.ak-prepared.com/serc/tier.htm>
- (Idaho) <http://www.bhs.idaho.gov/agency/ops/teir2.htm>
- (Oregon) http://www.sfm.state.or.us/CR2K/CR2K_Reports/Haz_Sub_Rept_Default_Pg.htm
- (Washington) <http://www.ecy.wa.gov/epcra/>.



5) Toxic Chemical Release Reporting

EPCRA Section 313 or Toxics Release Inventory (TRI) reporting requires certain facilities (see box) which have ten or more employees, and which manufacture, process, or use chemicals specified under the EPA **List-of-Lists** in amounts greater than threshold quantities, to submit an annual toxic chemical release report. This report, commonly known as the Form R, covers releases and transfers of toxic chemicals to various facilities and environmental media. The form must be submitted to EPA and the State on **July 1**. The threshold quantities that trigger reporting are:

- 25,000 pounds of specified toxic chemical manufactured or processed or 10,000 pounds otherwise used, except for certain Persistent Bioaccumulative Toxic Chemicals (PBT).
- 100 pounds or less of the PBT chemicals depending on the chemical.

Who's Covered by TRI?

The **TRI** reporting requirement applies to facilities that have 10 or more full-time employees, that manufacture (including importing), process, or otherwise use a listed toxic chemical above threshold quantities, and that are in one of the following sectors:

- Manufacturing
- Federal Facilities
- Metal and Coal mining
- Electric Utilities that combust coal and/or oil for commercial distribution
- Commercial Hazardous Waste Treatment Facilities regulated by Resource Conservation and Recovery Act or RCRA)
- Chemicals and Allied Products Wholesale
- Petroleum Bulk Terminals & Plants
- Solvent Recovery Services

CAA 112(r) *Regulated Facilities*

Incident Summaries and Lessons Learned

➤ Ethylene Oxide Explosion

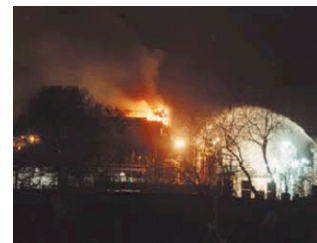
Incident Description: On August 19, 2004, an explosion occurred inside an ethylene oxide sterilization chamber and an associated thermal oxidizer at the Sterigenics facility in Ontario, California. Four employees suffered minor injuries and the facility was rendered unusable. The investigators found that: Sterigenics management did not implement company-wide engineering control recommendations that, if implemented, would have likely prevented this incident; the maintenance supervisor did not fully understand the hazards associated with the process during a maintenance procedure that led to an explosion; the Process Hazard Analysis did not fully identify and evaluate the hazard associated with an explosive concentration of Ethylene Oxide reaching the oxidizer; and the control room was not designed to protect workers from an explosion.



Damage to the Sterigenics facility following ethylene oxide explosion.

➤ Runaway Chemical Reaction and Explosion

Incident Description: On April 8, 1998, an explosion and fire occurred during the production of Automate Yellow 96 Dye at the Morton International Inc. plant in Paterson, New Jersey. The explosion and fire were the consequence of a runaway reaction, which overpressurized a 2000-gallon chemical vessel and released flammable material that ignited. Nine employees were injured. Investigators' root cause findings included: Rupture disks were too small to safely vent high pressure in the kettle; operating procedures did not cover the safety consequences of deviations from normal operating limits or specify steps to be taken to avoid or recover from such deviations; training did not address the possibility of a runaway reaction; process safety information did not warn of the potential for a runaway chemical reaction.



Fire lights sky after runaway chemical reaction causes explosion at Morton International.

➤ Hydrocarbon Vessel Overpressurization and Fire

Incident Description: On March 4, 1998, a catastrophic vessel failure and fire occurred near Pitkin, Louisiana, at the Temple 22-1 Common Point Separation Facility owned by Sonat Exploration Co. Four workers who were near the vessel were killed, and the facility sustained significant damage. The vessel lacked a pressure relief system and ruptured due to overpressurization during start-up, releasing flammable gas which produced a large fireball and ignited. The investigators found that: Sonat management did not use a formal engineering design review process or require effective hazard analyses in the course of designing and building the facility; the facility was constructed without producing engineering drawings of the process equipment; the engineering specifications did not ensure that equipment that could potentially be exposed to high-pressure hazards was adequately protected by pressure-relief devices; the workers were not provided with written operating procedures for the start-up and operation of the facility.



Aerial view of the petroleum tanks at the Sonat oil facility where overpressurization led to catastrophic vessel failure and fire.

➤ Chlorine Gas Release

Incident Description: On November 17, 2003, there was a release of chlorine gas from the DPC Enterprises chlorine repackaging facility in Glendale, Arizona. Fourteen people, including ten police officers, required treatment for chlorine exposure. The release occurred when chlorine vapors from a rail car unloading operation escaped from a system designed to recapture the material, known as a scrubber. Owing to the exhaustion of absorbent chemicals in the scrubber, chlorine gas was released. Investigators' root cause findings included: Quality Assurance management system did not ensure that chlorine transfer hoses met adequate specifications; the transfer hose distributor had no quality assurance program for its product, and testing and inspection program did not ensure that the process emergency shutdown was functioning correctly.



DPC's chlorine rail car unloading station in Glendale, Arizona.

(Source: Chemical Safety Board)

This newsletter provides information on the EPA Risk Management Program, EPCRA and other issues relating to the Accidental Release Prevention Requirements of the Clean Air Act. The information should be used as a reference tool, not as a definitive source of compliance information. Compliance regulations are published in 40 CFR Part 68 for CAA section 112(r) Risk Management Program, and 40 CFR Part 355/370 for EPCRA.